

## Original Article

## Feeding practices among tribal mothers of malnutrition prevalent region of Amravati District in India

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## ABSTRACT

**Introduction:** Due to lack of intra- and post-natal care, the feeding practices can lead to a number of morbidities in the infancy period. Infant care in the community is influenced by cultural practices prevalent in the specific area apart from medical and economic reasons. **Objectives:** The objectives of this study were to understand prevalent feeding practices among tribal mothers having children <3 years of age and to explore reasons behind these practices. **Methods:** This community-based cross-sectional descriptive study was done in the northern tribal region of Amravati district. A total of 312 mothers were selected randomly for the study. Data were collected through face-to-face interviews of mothers who had a child of age <3 years using the structured interview. **Results:** Nearly 35% of mothers gave colostrum to the baby after 1 h of birth. While 39% of mothers were not found to be feed colostrum to the baby due to family tradition or advice of the elders, and 68% rejected colostrum feeding because they thought it was not clean. As high as 90% of the mothers initiated complementary feeding to the baby between 6 and 8 months of age, whereas 59% of children suffered from illness during 6 months immediately preceding the study. **Conclusion:** Inappropriate feeding practices need to be corrected to ameliorate the nutritional and health status of infants in a tribal region in India.

**Key words:** Breast feeding, Feeding practices, Illness, Tribal mothers

Feeding practices are considered as the major determining components for nutritional and health condition of infants [1]. In India, the nationwide interventions aiming for safe mother and newborn feeding have not generated the desired impact and indicating the necessity to fight neonatal mortality rate at population specific level [2]. Around 4 million neonatal deaths occur globally every year, and 98% of the neonatal deaths occur in developing countries where most newborns die at home while they are reared by mothers, relatives, and traditional birth attendants [3]. In the past two decades, infant mortality rate declined moderately due to the slow decline in neonatal mortality. Feeding practices are key determining factors of morbidity among infants, and feeding practices are most significant and important for the survival, growth, and development of infants [4].

According to the World Health Organization (WHO) guidelines, for essential newborn, rearing includes the following highlights such as hygiene at the time of delivery, keeping the newborn warm, early initiation of breastfeeding, exclusive breastfeeding (EBF), caring of the eyes, nurturing during illness, and immunization and nurturing of low birth weight newborns [5]. The WHO recommends early initiation of breastfeeding within 1 h of delivery and EBF up to 6 months. Despite significant efforts in education and training to promote mother's milk, the prevalence of EBF remains low because of social, economic, and cultural

barriers [4,6]. Other contributory factors to infection are improper and inadequate weaning foods and wrong feeding practices like bottle-feeding as reported by the International Code of Marketing of Breast-milk Substitutes [7].

Studies on infant feeding in some communities showed that knowledge and practices of basic infant feeding such as hypothermia prevention, colostrum feeding, and EBF are lacking. Even cognizance on the identification of life-threatening signs has been found to be less [8]. The objective of this study was to understand the prevalent feeding practices among tribal mothers having children <3 years of age and to explore the reasons for these prevalent feeding practices.

## MATERIALS AND METHODS

The present study was conducted in the Melghat region of Amravati in Maharashtra state of India and comprised of two blocks, Dharni and Chikhaldhara, located on the northern part of Amravati district. This remote hilly region includes nearly 320 villages inhabited by the Korku tribe that represents 89.3% of the region's total population [9]. Avantha Foundation is working in 8 pockets (bits) of Melghat and Anganwadi was selected from project area of Avantha Foundation. This community-based cross-sectional study was carried out over 3 months from January 2016 to March 2016.

List of mothers was procured from Anganwadi centers, and literacy level of women in this area is 79%. Out of population of 648 mothers having children <3 years of age in 35 tribal villages, 312 mothers were selected randomly from the project area where the percentage of underweight children is more than 30 with 95% confidence level and 4% margin of error to understand prevalent feeding practices among tribal mothers. Systematic random sampling was followed in selecting mothers from the tribal area due to more migration rate in the study area. Migrated mothers were excluded from the study.

Data were collected through face-to-face interviews of mothers who had a child of age <3 years (born between 1<sup>st</sup> December 2012 and 1<sup>st</sup> December 2015) using the structured interview. Data were collected by Avantha Nutrition Fellows. The data collection tool for the structured interview consisted of two parts. The first part consisted of information related to social factors including education and occupation of the mother, type of house, and place of defecation, whereas the second section related to information of intra- and post-natal practices. All questions were close-ended. Data entry and analysis were completed using Excel 2007 (Version 12.0.6728.5000) and Statistical Package for the Social Sciences Version 16.0. Statistical significance was assessed using Chi-square test and t-test.  $p < 0.05$  was taken as statistically significant, and odds ratio (OR) with 95% confidence interval (CI) was computed.

## RESULTS

Sociodemographic characteristics of study participants are illustrated in Table 1. The majority of mothers were literate, and most of them engaged in either agriculture work or as casual laborers. Most participants had houses built of mud bricks and used open spaces for defecation due to lack of toilets (Table 1). Almost half of the mothers delivered their baby at public hospital and the rest at home. Very few women delivered at private hospitals due to few private hospitals in this area.

Odds of the initiation of breastfeeding the child within 1 h after delivery is higher in literate mothers (OR=1.34, 95% CI: 0.76-2.37) as compared to illiterate mothers, and odds of initiation of breastfeeding after 1 h of delivery are higher in women who delivered at home (OR=5.06, 95% CI: 3.04-8.42) as compared to women who delivered at hospital (Table 2). Analysis on colostrum feeding shows 263 (84%) mothers gave colostrum to the newborn, whereas colostrum was rejected by 49 (16%) mothers. Odds of colostrum feeding are higher in literate mothers (OR=1.09, 95% CI: 0.53-2.28) as compared to illiterate mothers. Odds of mothers who did not give colostrum to the newborn are higher among women who delivered at home (OR=2.11, 95% CI: 1.14-3.93) as compared to women who delivered at hospital. According to analysis, 185 (59%) children suffered from illness during the past 6 months, whereas 127 (41%) were not found to be ill. The t-test shows a significant association between education of mother and child suffering from illness during the past 6 months, i.e.,  $p = 0.022$ . Odds of child suffering from illness

**Table 1: Sociodemographic characteristics of study participants (n=312)**

Variable	Category	Value (%)
Education of mother	Illiterate	66 (21)
	Literate	246 (79)
Occupation of mother	Homemaker	41 (13)
	Agriculture work	136 (44)
	Casual laborer	121 (39)
	Other	14 (4)
Type of house	Mud bricks house	259 (83)
	Solid and permanent house	53 (17)
Place of defecation	Own toilet	18 (6)
	Community toilet	5 (2)
	Open space	289 (92)

**Table 2: Intranatal care, newborn care practices, and illness of child (n=312)**

Variable	Value (%)
Delivery at private hospital	5 (2)
Delivery at public hospital	171 (55)
Delivery at home	136 (43)
Breastfeeding within 1 h after delivery	190 (61)
Breastfeeding after 1 h of delivery	109 (35)
Do not know the time of breastfeeding after delivery	13 (4)
Colostrum to newborn	263 (84)
Children suffering from any illness during the past 6 months	185 (59)

are higher in illiterate mothers (OR=1.48, 95% CI: 0.86-2.56) as compared to literate mothers. Odds of child suffering from illness are also higher in people who do not have toilets and do open defecation (OR=2, 95% CI: 0.85-4.7) as compared to people who have toilets.

Following reasons were given for not giving breast milk within 1 h of birth: Out of 109 mothers, 24 (22%) gave the reason that milk was not available, 14 (13%) failed to breastfeed because of C-section, 3 (3%) mothers were unwell, whereas most of the 43 (39%) mothers were not breastfed due to family tradition or advice of the elders in the family. Four (4%) mothers said that baby was unable to suck the nipple, and 21 (19%) mothers were not aware about the reason. A total of 49 mothers did not give colostrums to their babies. Out of 49 mothers, 33 (68%) believed that colostrum is not clean, 9 (18%) mothers were failed to give colostrum because it was not available while 2 (4%) were failed to feed because of C-section. Family tradition was not allowed 2 (4%) mothers to feed colostrum to their newborn and 3 (6%) were not understood the reason.

Out of 269 mothers, who could tell about the time of initiation of complementary feeding, 3 (1%) mothers started complementary feeding to the child before 3 months. No mother started between 3 and 5 months, and most of the mothers (241, 90%) started complementary feeding to their child between 6 and 8 months. 21 (7%) mothers started after 8 months while four (2%)

whose children have completed 6 months but were not started complementary feeding at the time of interview. The t-test shows correlation between education of the mother and the time of initiation of complementary feeding within 6 months is positive, i.e.  $p=0.04$ .

A total of 265 mothers could tell about the complementary feeds given to their child. Out of them, 262 (99%) mothers fed their child with rice or lentils, 56 (21%) gave cow/buffalo/goat milk, 216 (81%) gave mashed roti, and 59 (22%) gave mashed fruits/vegetables, whereas 236 (89%) mothers gave take home ration received from Anganwadi centers. However, 36 mothers (14%) gave only biscuits or snacks, and 2 (1%) mothers gave other food items.

## DISCUSSION

Feeding practices are the significant aspect of community medicine. Healthy feeding practices assure health and safety of infants. According to Census of India 2011, 79% of females are literate [10], and as per the National Family Health Survey-4 (NFHS-4) data of Amravati district, 81.9% of females are literate in rural parts [11]. In the present study, 79% of mothers were literate, which is equal to the literacy rate in census 2011 [10] but less than NFHS-4 survey [11]. There was a slow increase in institutional delivery in India, without the sign of acceleration in achieving the national goal of 80% coverage in 2008 [12]. In the present study, only 57% deliveries were conducted in institutions. According to the NFHS-4 report, 91.7% deliveries were conducted in institutions in rural parts of Amravati district and 86.7% in rural Maharashtra [11].

According to the Infant and Young Child Feeding Practices Guidelines 2006 [13], the Government of India advocates that early initiation of breastfeeding should commence within 1 h after birth. According to the NFHS-4 survey, 63.6% of mothers of rural Amravati district have initiated breastfeeding within an hour of delivery [11]. In the present study, breastfeeding within an hour of delivery was initiated by 61% of mothers. Initiation of breastfeeding within 1 h was lower in the study by Kumar et al. [14] and Saurav and Sandhita, [15] it was only 6.3% and 14.54% only. There is a significant association of breastfeeding within an hour after birth with the literacy of mothers and the place of delivery. This meant that hospital staff and public health workers and some non-profit organizations are working actively to make a change in tribal communities. However, they have to work more actively to improve the attitude of parents toward institutional delivery and breastfeeding.

84% of mothers fed colostrum to the newborn while 16% gave reasons like it is not clean, it was not available, due to family tradition, or C-section for not feeding colostrum. Some mothers do not know the reason. This reflects the beliefs of tribal community about the colostrum feeding. In our study, 84% of mothers fed colostrum which is close to the findings of Thakur and Kumar [16], Takalkar et al. [17], and Parmar et al. [18]. In a study in Uttar Pradesh [19], only 11.8% of the women

gave colostrum to their newborns, and in a district of Madhya Pradesh [20], it was found that only 22.7% of mothers had given colostrum to their baby. The WHO advocates EBF to 0-6 months of children with early initiation and continuation of breastfeeding for 2 years or more in conjunction with nutritionally sufficient and appropriate complementary feeding starting at 6 months [21]. Immediate breastfeeding, EBF from 0 to 6 months, and timely initiation of age-appropriate complementary feeding are key interventions to accomplish millennium development goals one and four, which address the child malnutrition of targets and mortality, respectively.

90% of mothers who participated in this study have started complementary feeding to the infants between 6 and 8 months. Most of the mothers fed the child with rice and lentils or mashed roti or food brought from the Anganwadi center while other things included cow, buffalo, or goat milk or smashed fruits/vegetables or biscuits or snacks. According to a study done in South American country Peru, 10% of infants were fed with formula milk, semisolid, and solid diet which was less than the observations made in the present study. Notwithstanding, the proportion of infants fed with animal milk, semisolid, and solid diet in the former study [22] was 58% which was also less than the observations made in the present study. In the present study, 59% of children suffered from illness during the past 6 months at the time of interview. There is a significant correlation between education of the mother and the child suffering from illness during the past 6 months. Furthermore, there is an association between open defecation and the child suffering from illness during the past 6 months.

## CONCLUSIONS

Wrong feeding practices and beliefs about the early initiation of breastfeeding, EBF, and complementary feeding are prevalent in the study area. The most important influencing factor behind these wrong feeding practices was illiteracy, and this underscores the necessity of intervention in rural areas like the promotion of health education. From these observations, it seems that conventional child feeding practices are still dominant in tribal/rural areas and certainly not good for the growth and development of children. Health education and counseling on infant health need to be given to pregnant women, and young mothers would redress such wrong infant feeding practices.

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